way) suggested the largest driver of cost-effectiveness was the effect of irinotecan dose reduction on survival. Value of information analysis indicated a low value of future research to reduce parameter uncertainty (5 year population EVPI: £31,564). However, assumptions affecting model structure had a relatively higher impact on cost-effectiveness. **CONCLUSIONS:** This is the first economic evaluation of UGT1A1 testing to reduce the incidence of febrile neutropaenia. This study illustrated the importance of considering febrile neutropaenia in addition to grade 3 and 4 neutropaenia in evaluations of UGT1A1 testing.

PMD43

AN EVIDENCE-BASED MICROSIMULATION MODEL FOR CHRONIC GRAFT VERSUS HOST DISEASE IN SPAIN

Sierra J[1], Perez-Simon J[2], Crespo C[3], Rodríguez J[4], Brosa M[3]
[1]*Hospital de la Santa Creu i Sant Pau, Barcelona, Spain,* [2]*Hospital Virgen del Rocio, Sevilla, Spain,* [3]*Oblikue Consulting, Barcelona, Spain,* [4]*Johnson & Johnson, Madrid, Spain*

OBJECTIVES: Rituximab (Rmb), Imatinib (Imt) and extra-corporeal photopheresis (ECP) are some of the strategies used as rescue therapy among patients with chronic graft-versus-host disease (cGVHD) who failes previous lines of treatment. The purpose of the study was to assess the cost-effectiveness of ECP in patients with cGVHD in Spain. **METHODS:** A Microsimulation model was built to estimate the clinical and economic consequences of ECP versus Rmb or Imt for 1000 hypothetical patients. Model probabilities concerning the efficacy of ECP, Rtm and Imt and severity degree per organ affected were obtained from literature. Treatment pathways and adverse events were evaluated taking into consideration expert opinion. Local data on costs (Euros 2010) and use of health resources were also validated by clinical experts. An annual 3% discount rate was applied to costs and outcomes. The perspective was the Spanish National Health System and time horizon was 5 years. **RESULTS:** Differences in improvement when ECP is used showed a gain at first year of 6.2% and of 6.7% against Rmb and Imt, respectively. The higher efficacy of ECP leads to a gain of 0.011–0.024 Quality Adjusted Life Year in the first year and 0.062-0.094 at year five compared to Rmb or Imt. Results showed than higher acquisition cost of ECP vs Imt was compensated at 9 months by higher efficacy and vs Rmb was partially compensated (517€ year 5). After 9 months, ECP was dominant vs Imt. The incremental cost-effectiveness ratio of ECP versus Rmb was 29,646€ per LY gained and 24,442 € per QALY gained at year 2.5. The probabilistic sensitivity analysis show robustness of results, being the ECP cost-effective in 70% of the simulated cases at year 5 (threshold of €30,000 per QALY gained). **CONCLUSIONS:** ECP as third-line therapy for cGVHD is a more cost-effective compared to Rmb or Imt.

PMD44

ECONOMIC EVALUATION OF THE UGT1A1 PHARMACOGENETIC TEST TO INFORM DOSE SELECTION OF IRINOTECAN-BASED CHEMOTHERAPY

Shabaruddin FH[1], Elliott RA[2], Tappenden P[3], Payne K[4]
[1]*University of Malaya, Kuala Lumpur, Malaysia,* [2]*University of Nottingham, Nottingham, UK,* [3]*University of Sheffield, Sheffield, UK,* [4]*University of Manchester, Manchester, UK*

OBJECTIVES: The UGT1A1 pharmacogenetic test can potentially inform irinotecan dose selection and reduce the incidence of neutropaenia, a key adverse event of irinotecan-based chemotherapy in advanced colorectal cancer (CRC). Neutropaenia has a negative impact on health and its management uses healthcare resources. The UGT1A1 test identifies patients at low-, intermediate- or high-risk of grade 3&4 neutropaenia. High-risk patients can be prescribed lower doses to reduce the incidence of neutropaenia. This study aimed to assess the cost-effectiveness of UGT1A1 testing and identify key parameters driving cost-effectiveness. **METHODS:** An economic model of UGT1A1 testing to predict grade 3&4 neutropaenia compared to standard care was developed over a lifetime horizon from the UK NHS perspective. Treatment pathways were informed by a national survey of CRC experts (n=44). The model was populated with data from: systematic reviews of the effectiveness and utility literature; a micro-costing observational study (n=48 patients) and CRC expert (n=55) elicitation. **RESULTS:** UGT1A1 testing was cost-saving and resulted in lower incidence of grade 3&4 neutropaenia. For a cohort of 100 patients, the test was estimated to save £14,500, avoid 4.4 neutropaenic episodes, gain 0.06 life-years and 0.05 QALYs. The probability that the test was cost-effective at willingness-to-pay thresholds between £20,000 and £30,000 per QALY gained was above 95%. These findings were specific to model assumptions and specifications. Sensitivity analysis (probabilistic and one-way) suggested that the main driver of cost-effectiveness was the effect of irinotecan dose reduction on survival. Value of information analysis indicated a low value of future research to reduce parameter uncertainty (5 year population EVPI: £13,116). In contrast, assumptions affecting model structure had a comparatively greater impact on cost-effectiveness. **CONCLUSIONS:** This analysis modelled NHS-relevant clinical treatment pathways and provided potentially useful evidence for UK decision-makers. Structural model assumptions rather than parameter inputs had a larger impact on cost-effectiveness.

PMD45

OPTAR STUDY: TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI) VERSUS OPTIMAL MEDICAL TREATMENT (OMT) IN PROHIBITIVE SURGICAL RISK PATIENTS WITH SEVERE AORTIC STENOSIS (AS) – AN EXPLORATORY COST-EFFECTIVENESS ANALYSIS

Teles RC[1], Almeida M[1], Eaton JN[2], Watt M[2], Busca MR[3], Farinha S[4], Mendes M[1]
[1]*Hospital Santa Cruz, Lisbon, Portugal,* [2]*Oxford Outcomes Ltd, Oxford, Oxon, UK,* [3]*Medtronic International Trading Sàrl, Tolochenaz, Switzerland,* [4]*Medtronic Portugal, Lisbon, Portugal*

OBJECTIVES: Aortic valve stenosis is a chronic and progressive valvular heart disease. The standard treatment of this condition involves a major open surgery. For patients currently ineligible for surgery, medical management is the only option available. Transcatheter aortic valve implantation (TAVI) devices recently appeared as a new less invasive treatment option. The objective of this study was to develop an exploratory cost-effectiveness analysis of TAVI vs Optimal Medical Treatment (OMT) in the Portuguese Setting. **METHODS:** This analysis used a Markov model developed by Oxford Outcomes to assess costs and benefits of TAVI vs OMT. A short term sub-model represents the first 30 days after TAVI (cycle length of one day), whereas a long term model (cycle length of one month) considers a 10-year time horizon. For TAVI patients the health states considered are ICU, General Wards, Home, Re-operation and Death. OMT patients are in either Home or Dead health states, receiving medication until death and at risk of co-morbidity-related hospitalisations. Portuguese NHS healthcare resource consumption was retrospectively collected at Hospital de Santa Cruz in Lisbon for a cohort of 44 high risk AS patients (21 TAVI; 23 OMT), over a period of 11 months. Clinical parameters, transition probabilities and utility values were derived from relevant literature. Costs were taken from the official Portuguese published tables and hospital reports. Costs and benefits were discounted at 5% p.a. Probabilistic and one-way sensitivity analysis were performed. **RESULTS:** Treatment with TAVI compared to OMT increased life years by 1.7 (3.13 vs. 1.46) and quality-adjusted life years (QALYs) by 1.4 (2.23 vs. 0.80). Direct costs were 32,067€ with TAVI and 4,662€ with OMT. Incremental Cost Effectiveness Ratios (ICERs) estimated are 16,375 €/LYG and 19,180 € /QALY. **CONCLUSIONS:** TAVI is highly likely to be a cost-effective intervention for the treatment of AS in patients who are currently ineligible for surgery.

PMD46

DEVELOPMENT OF A STANDARD REIMBURSEMENT DOSSIER FOR THE EVALUATION OF EFFECTIVENESS AND COST-EFFECTIVENESS OF A NEW MEDICAL DEVICE (NEBULIZER MINI-PLUS)

Dózsa C[1], Borcsek B[2]
[1]*University of Miskolc, Miskolc, Hungary,* [2]*Med-Econ Ltd, Verõce, Hungary*

OBJECTIVES: In Hungary the re-regulated, transparent coverage system of medical aids was put into force in 2007 (after the re-regulation of coverage policy of drugs /2004/). Until 2010 287 reimbursement applications were evaluated by the Office of HTA of the National Institute for Strategic Health Research. The aim of the study was to develop a standard reimbursement dossier, which evidenced the effectiveness and cost-effectiveness of a new medical device (Nebulizer Mini-Plus). **METHODS:** According to a recommendation of the above mentioned HTA Office the combined assessment of technical functions and prices was suggested as eligible filter for the coverage of products with sufficient price-value rate. Hence the base of the study was: to compare the technical parameters of nebulizers and to use the cost-minimization analysis (CM). The study had payer's perspective, but aspect of equity (burden of disease) was taken into consideration because of the high significance of diseases of respiratory system. After the literature review and comparison of technical parameters of nebulizers, the 2009-2010 turnover of nebulizers were analysed and the budget impact was estimated for 2011-2012, considering the business risks. **RESULTS:** Taking into consideration that several technical parameters (lung deposition, particle size) of Mini-Plus exceeded other devices and its price was lower than the cheapest reimbursed device: it was expressed as the dominant alternative of compression nebulizer therapies. By its coverage the payer can reach almost 15.000 USD saving and minimally 3685 USD burden loss (reducing of co-payment) for patients until 2012. There are additionally cost-saving potentials in reduction of drug consumption and hospitalization. **CONCLUSIONS:** The combined assessment of technical functions and prices (supported by CM) was a successful and eligible strategy for the evaluation of the effectiveness and cost-effectiveness of a new medical device, and can be adapted for other types of medical aids.

PMD48

AN ECONOMIC EVALUATION OF THE HEARTWARE VENTRICULAR ASSIST DEVICE IN THE NHS

Craig J[1], Saxby RC[1], Homer T[2], Swartz MT[2]
[1]*University of York, Heslington, York, UK,* [2]*HeartWare Inc., Framingham, MA, USA*

OBJECTIVES: End-stage heart failure is a leading cause of death; patients have a poor prognosis and low quality of life. Managing the limiting and distressing symptoms places significant costs on the NHS. Therapy options are few; primarily combination medical therapy and, for a few patients, transplantation using a donor heart. Left ventricular assist devices (LVADs) are mechanical pumps that support the heart function. Use is increasing worldwide as more studies demonstrate clinical effectiveness, primarily from improved patient survival and quality of life. However, there are no published cost effectiveness studies. This pilot evaluates the cost effectiveness of the HeartWare LVAD as destination therapy for patients with end-stage heart failure. **METHODS:** A cost-utility model compared the outcomes and costs of patients who were medically managed without a transplant (n=15) with those who received a HeartWare LVAD and no subsequent transplant (n=17). Clinical data were from a multicentre trial evaluating the safety and efficacy of the HeartWare LVAD [1] and outcomes for patients listed on the NHS Blood and Transplant Registry [2]. Utility values were from a Health Technology Assessment [3] and derived using the EQ-5D tool. Cost data came mainly from published sources. **RESULTS:** The results from this evaluation were patients managed with the HeartWare device had higher costs but better outcomes than those who were medically managed. At 5 years the additional cost was about £20,500 per patient and a QALY gain of 1.05, giving an incremental cost per QALY of under £20,000, below the threshold commonly adopted of £25,000 per QALY. **CONCLUSIONS:** The results are encouraging and suggest it is plausible that using LVADs as long-term support in patients with end-stage heart failure could be a cost-effective use of healthcare provider resources. Further research is needed to refine the clinical and cost data.